

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A carriage driving apparatus comprising:
a motor for driving a carriage;
a storage device that stores a plurality of sets of parameters necessary for controlling the motor; and
a control device, ~~that selects one set of parameters stored by the storage device and controls the motor based on the one set of parameters,~~
wherein:
the control device controls operation of the carriage using a first set of the plurality of sets of parameters and detects a first behavior of the carriage in a constant speed area,
after controlling the operation of the carriage using the first set of the plurality of sets of parameters, the control device controls operation of the carriage using a second set of the plurality of sets of parameters and detects a second behavior of the carriage in the constant speed area, and
after controlling the operation of the carriage using at least the first set and the second set of the plurality of sets of parameters, the control device selects one of the plurality of sets of parameters based on the detected first behavior and the detected second behavior.
~~the one set of parameters to be selected are determined based on the behavior of the carriage in a constant speed area when the carriage is driven by the motor.~~
2. (Currently Amended) The carriage driving apparatus as set forth in claim 1, wherein the ~~selected one~~ set of parameters ~~includes~~include at least two parameters relating

~~to among~~ P gain, I gain and D gain for controlling the motor by PID control and a variety of parameters ~~that which~~ characterize a driver of the motor.

3. (Currently Amended) The carriage driving apparatus as set forth in claim 1, wherein the motor is driven based on ~~each set of parameters with respect to each a~~ target speed of the carriage in the constant speed area, and the one of the plurality of sets ~~set~~ of parameters to be selected ~~for with respect to the each~~ target speed is determined based on the detected behaviors ~~behavior~~ of the carriage in the constant speed area.

4. (Currently Amended) The carriage driving apparatus as set forth in claim 3, wherein one of the detected behaviors is a moving speed of the carriage and the selected one of the plurality of sets ~~a set of parameters~~ corresponds to the set of parameters, based on which ~~a~~ the minimum value of the detected moving speed of the carriage is ~~the largest, when the motor is driven based on the each set of parameters, are determined to be the one set of parameters to be selected with respect to the each target speed.~~

5. (Currently Amended) The carriage driving apparatus as set forth in claim 3, wherein one of the detected behaviors is a moving speed of the carriage and each of the plurality of sets ~~a set of parameters~~, based on which one of ~~a~~ the maximum value and ~~a~~ the minimum value of the detected moving speed of the carriage in the constant speed area is beyond a predetermined range ~~with respect to the for the each target speed is disqualified from being the selected one of the plurality of sets of parameters, are determined not to be the one set of parameters to be selected with respect to the each target speed.~~

6. (Currently Amended) The carriage driving apparatus as set forth in claim 1, wherein the storage device stores a plurality of sets of parameters respectively expected to be optimum in accordance with a plurality of load amounts ~~the amount of load to the which a~~ drive system of the carriage can be subjected.

7. (Currently Amended) The carriage driving apparatus as set forth in claim 1, further comprising a temperature detection device for detecting ~~the~~ temperature in ~~a~~the vicinity of ~~a~~the drive system of the carriage, wherein ~~the control device selects the one set of parameters also referring to the temperature detected by the temperature detection device is~~ used by the control device to select one of the plurality of sets of parameters.

8. (Currently Amended) The carriage driving apparatus as set forth in claim 7, wherein if the temperature detected by the temperature detection device is the one set of parameters to be selected by the control device at or below a predetermined low temperature, a predetermined one of the plurality of sets of parameters is selected ~~is the same~~ regardless of the detected behavior of the carriage in the constant speed area.

9. (Currently Amended) The carriage driving apparatus as set forth in claim 7, wherein if the temperature detected by the temperature detection device is the one set of parameters to be selected by the control device at or below a predetermined low temperature, the control device selects one of the plurality of sets of parameters based on the detected temperature and is determined also referring to the detected behavior of the carriage in the constant speed area.

10. (Canceled)

11. (Currently Amended) The carriage driving apparatus as set forth in claim 7, wherein the storage device stores a plurality of sets of parameters respectively expected to be optimum in accordance with a plurality of the load amounts of load to which the drive system of the carriage can be subjected and the detected temperature in the vicinity of the drive system of the carriage.

12. (Canceled)

13. (Canceled)

14. (New) A carriage driving apparatus as set forth in claim 6, further comprising a temperature detection device for detecting temperature in a vicinity of a drive system of the carriage,

wherein the storage device stores a set of parameters expected to be optimum in accordance with respective detected temperatures, as detected by the temperature detection device.

15. (New) A motor control method for driving a carriage based on a selected one set of parameters selected from a plurality of sets of parameters useable for driving and controlling a motor and stored by a storage device, the motor control method comprising:

executing a plurality of driving operations of the carriage using different ones of the plurality of sets of parameters for each of the plurality of driving operations;

detecting a plurality of behaviors of the carriage in a constant speed area during each of the plurality of driving operations;

selecting one of the plurality of sets of parameters based on the plurality of detected behaviors corresponding to at least two of the plurality of driving operations; and

controlling the motor for driving the carriage based on the selected one of the plurality of sets of parameters.

16. (New) A motor control method as set forth in claim 15, wherein the selected set of parameters includes at least two parameters relating to P gain, I gain and D gain for controlling the motor by PID control and a variety of parameters that characterize a driver of the motor.

17. (New) A motor control method as set forth in claim 15, wherein the selected one set of parameters is selected based on the plurality of detected behaviors of the carriage in the constant speed area.

18. (New) A motor control method as set forth in claim 17, wherein the selected one set of parameters is selected based on which one of the different ones of the plurality of sets of parameters used to execute the plurality of driving operations resulted in detecting a largest minimum value of a moving speed of the carriage in the constant speed area.

19. (New) A motor control method as set forth in claim 15, wherein the stored plurality of sets of plurality of parameters are respectively expected to be optimum in accordance with a plurality of load amounts to which a drive system of the carriage can be subjected.

20. (New) A motor control method for driving a carriage based on one set of parameters selected from among a plurality of sets of parameters useable for driving and controlling a motor and stored by a storage device, the motor control method comprising:

executing a plurality of driving operations of the carriage using different ones of the plurality of sets of parameters;

detecting a plurality of behaviors of the carriage in a constant speed area during each of the plurality of driving operations;

detecting a temperature in a vicinity of a drive system of the carriage;

selecting one of the plurality of sets of parameters based on the detected temperatures and the plurality of detected behaviors corresponding to at least two of the plurality of driving operations; and

controlling the motor for driving the carriage based on the selected one of the plurality of sets of parameters.

21. (New) A motor control method as set forth in claim 20, wherein if the temperature detected by the temperature detection device is at or below a predetermined low temperature, a predetermined one of the plurality of sets of parameters is selected regardless of the detected behavior of the carriage in the constant speed area.

22. (New) A motor control method as set forth in claim 20, wherein the stored plurality of sets of parameters are respectively expected to be optimum in accordance with a plurality of load amounts to which the drive system of the carriage can be subjected and the detected temperature in the vicinity of the drive system of the carriage.